

nerdling
issue #10

introduction

Most of the learning we do is miserable. School can suck even when we're learning what we love. Sometimes it feels that retaining our inspiration or enthusiasm requires a bravery and strength that we just don't possess.

nerdling can't do your assignments for you, or stand in for you in the classes with the sucky teachers. But we just beg you to remember that it's worth it to try and retain your passion against all odds. In this zine is this month's offering of slightly random stuff we find cool. Mostly it's not deep or intellectual. But believe it or not, life's not about that sort of stuff.

the übernerdling · editor, nerdling zine

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It's a joke. If you don't get it, ask a nerdy friend.

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Certainly not the average Joe, although you wouldn't tell from some of the names.



Chemical Alert

reproduced for your information and safety
from http://www.circus.com/~no_dhmo/



Dihydrogen Monoxide: The Invisible Killer

Dihydrogen monoxide is colourless, odourless, tasteless, and kills uncounted thousands of people every year. Most of these deaths are caused by accidental inhalation of DHMO, but the dangers of dihydrogen monoxide do not end there. Prolonged exposure to its solid form causes severe tissue damage. Symptoms of DHMO ingestion can include excessive sweating and urination, and possibly a bloated feeling, nausea, vomiting and body electrolyte imbalance. For those who have become dependent, DHMO withdrawal means certain death.

Dihydrogen monoxide:

- is also known as hydroxyl acid, and is the major component of acid rain.
- contributes to the "greenhouse effect."
- may cause severe burns.
- contributes to the erosion of our natural landscape.
- accelerates corrosion and rusting of many metals.
- may cause electrical failures and decreased effectiveness of automobile brakes.
- has been found in excised tumours of terminal cancer patients.

Contamination Is Reaching Epidemic Proportions!

Quantities of dihydrogen monoxide have been found in almost every stream, lake, and reservoir in America today. But the pollution is global, and the contaminant has even been found in Antarctic ice. DHMO has caused millions of dollars of property damage in the mid-west, and recently California.

Despite the danger, dihydrogen monoxide is often used:

- as an industrial solvent and coolant.

- in nuclear power plants.
- in the production of Styrofoam.
- as a fire retardant.
- in many forms of cruel animal research.
- in the distribution of pesticides. Even after washing, produce remains contaminated by this chemical.
- as an additive in certain "junk-foods" and other food products.

Companies dump waste DHMO into rivers and the ocean, and nothing can be done to stop them because this practice is still legal. The impact on wild-life is extreme, and we cannot afford to ignore it any longer!

The Horror Must Be Stopped!

The American government has refused to ban the production, distribution, or use of this damaging chemical due to its "importance to the economic health of this nation." In fact, the navy and other military organizations are conducting experiments with DHMO, and designing multi-billion dollar devices to control and utilize it during warfare situations. Hundreds of military research facilities receive tons of it through a highly sophisticated underground distribution network. Many store large quantities for later use.

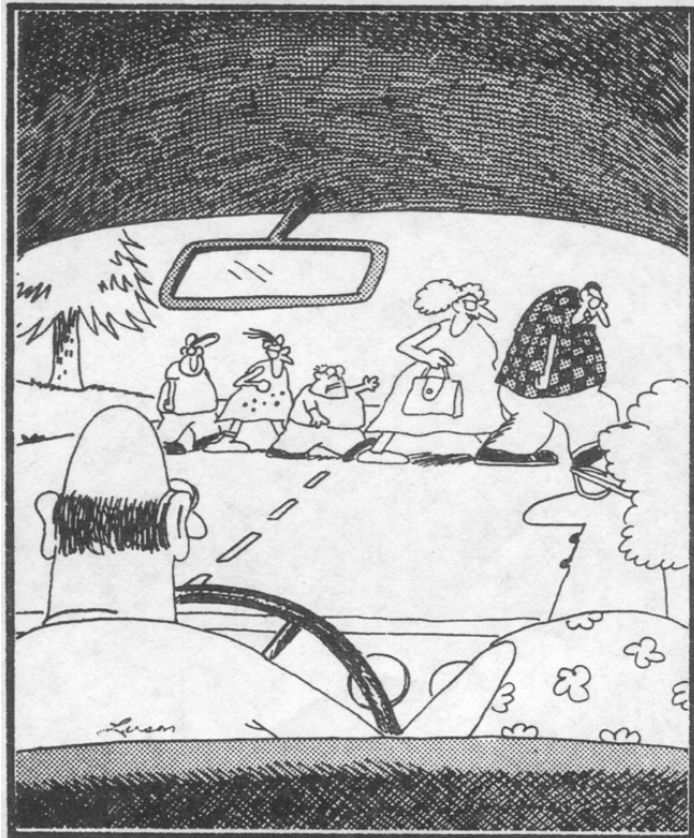
It's Not Too Late!

Act **NOW** to prevent further **contamination**. Find out more about this **dangerous** chemical. What you don't know **can** hurt you and others throughout the world. Send email to no_dhmo@circus.com, or a stamped, self-addressed envelope to:

Coalition to Ban DHMO
211 Pearl St.
Santa Cruz CA, 95060
USA

More information, including
Material Safety Data Sheets,
available from
<http://www.dhmo.org/>





"Oh, look, Roger! Nerds! ... And
some little nerdlings!"

Thanks to Katrina Zaat who found it.

The Classics Are Full Of The Most Wonderful Shit

#1: Plato's *Timaeus*

In *Timaeus*, Plato gives his account of the physical and metaphysical universe, including his famous theory that geometrical shapes are the elemental building-blocks of nature. Written circa 360 B.C., it is known as one of the works most influential in creating our modern scientific philosophy.


Nonetheless, it is still full of shit.

Every fact contained in it is either unclear, confused, or utterly wrong. A book that can do this and still be revered by scholars deserves the attention and admiration of science and philosophy students everywhere, who (let's face it) try to pull the same thing off in most exams.

So let's put all the pretentious namby-pamby aside and just look at how funny Plato is when he's totally screwing everything up.



continued over >



[Page numbers are the system used in the classic 1578 version by Stephanus, adopted by most modern works.]

<p36> **The souls of the planets:** Plato goes to great lengths to describe how the universe and the planets within it must have a soul. This is because Plato, not having any modern first-year physics textbooks on hand, knew nothing of Newtonian Mechanics—particularly inertia—and thought nothing could move without a constant driving force. But this is exactly what the planets appeared to do. Therefore, Plato turned to the only other thing that can move by itself: the human being. Since *everyone* knows the human motive force is the soul, therefore the planets must also have souls. A marvellous piece of reasoning with absolutely no great leaps of fantasy in it whatsoever.

<p41> **Birth, death and reincarnation:** Every human soul is allocated a star. When we are born we come down off this star as a man, the most perfect form (according to Plato, who was, coincidentally, a man). If you are good you go back to your star and live an “appropriately happy life.” If you are bad you are reincarnated as a woman, and then as an animal.

<p44> The most gorgeous **explanation for the human form:** “To prevent the head from rolling about on the earth, unable to get over or out of its many heights or hollows... that is the reason why we all have arms and legs.”

<p45> **How we see.** Plato believed we all see by shooting light rays out of our eyes. (These eye rays have to intersect with light rays from fire or the sky before stimulating signals are passed to our brain.) We can excuse his scientific error here, because his explanation is just so freakin’ awesome.

When the eyelids are shut, the rays shooting out of our eyes are confined inside the head and bounce around causing dreams. It’s all... so... simple.

<p67> **What is ‘colour’?** Colour is “a kind of flame that streams off bodies of various kinds”. The size of the particles in this flame determines whether the colour is black (large particles), white (small particles) or red (medium particles). A fourth colour, ‘bright’, is formed when ‘fast’ light mixes with fire and water in the eye. Plato then proceeds to explain how these four colours combine in the eye to produce the entire spectrum, for example: “ ‘Bright’ mixed with red and white produces orange [...] Red mixed with black and white gives purple, or deep blue when these ingredients are well burnt and more black added.” Something tells me Plato never tried his hand at painting.

<p70> **The purpose of various bodily organs:**

The neck was constructed to keep the head (which houses reason and the soul) separated from the chest (in which reside mortal emotions and appetite) and stop one “polluting” the other.

The heart circulates blood, which acts to distribute commands and courage around the body.

The lungs exist to cool the heart by ‘absorbing breath and drink’. It is soft and spongy to act also as a cushion for the heart.

The stomach is located as far as possible from the head, so it will hassle us less when we're hungry.

The liver exists to take our moods and manifest them in the body. When we are happy the liver is nice and shiny and we are "able to spend the night quietly in divination and dreams", but when we are fearful it is "all wrinkled and rough... blocking and closing the vessels leading to it and so causing pain and nausea."

The spleen "keeps the liver bright and clean, like a duster kept handy to clean a mirror."

<p78> **Explanations of bodily functions:**

Digestion and circulation: inhaled air drags the fire in our body into the stomach. This fire breaks down our food and carries it into our veins. O...kay. Oh, and blood is red because that's the colour you get when you mix fruit and vegetables with fire.

Drinking: "What we drink makes its way through the lung into the kidneys and thence to the bladder from which it is expelled by air pressure." (p.91)

Respiration: when we exhale, something has to come into the body to take the place of the exhaled air, otherwise there would be a vacuum in our body. So every time we breathe out, air rushes in through our pores. Likewise, when we breathe in, this 'replacement' air is expelled through the pores.

<p81> **Disease:** "The origin of disease should be obvious. The body is composed of four elements—earth, fire, air and water; and disorders and diseases are caused by an unnatural excess or deficiency of any of them."

<p91> **Women:** Plato believed the womb was "a living creature inside [women] which longs to bear children." If it is left unfertilised long beyond the normal time, it gets all agro and goes roaming around inside the body, playing havoc with the lungs and all sorts of other things. From this, we are lead to the astounding conclusion that there was a time when men actually understood less about women than they do today.

<p91-92> **The origin of the species:** Plato goes nuts and attacks his opponents by turning them into animals. Warning: classic quotes ahead.

"Birds were produced by a process of transformation, growing feathers instead of hair, from harmless, empty-headed men, who were interested in the heavens but were silly enough to think that visible evidence is all the foundation astronomy needs.

"Land animals came from men who had no use for philosophy ... their skulls were elongated into various shapes as a result of the crushing of their circles [brains] through lack of use. The stupidest of the land animals ... the god turned into reptiles."

"The most unintelligent and ignorant of all turned into the fourth kind of creature that lives in the water ... they live in the depths as a punishment for the depth of their stupidity." Aha, very deep.

<p92> **Plato's conclusion to *Timaeus*:** "We can now claim that our account of the universe is complete." Yes, well done.





No One Ever Says Reykjavik in a Song: Part II



By chess correspondent Daniel Cotton

Part I of *No One Ever Says Reykjavik in a Song* appeared in **nerdling** #9. It introduced Bobby Fischer, the American chess player who described himself as “an



Spassky

all-round genius” but was described by others as “brash, arrogant, selfish, self-centred, boorish, loutish, cruel [...] and mad.” This second and final instalment tells the unbelievable story of the 1972 World Championship Match between Fischer and Spassky in Reykjavik, Iceland, which included psychological war-games, hissy fits, and accusations of spying, as well as some very fine chess.



Fischer

The scene was set. Bobby Fischer would meet Boris Spassky to contest the title of World Champion. Yet the game almost didn't go ahead: Fischer refused to play the match in Russia and Spassky, in retaliation, refused to play in the USA despite all reports suggesting he quite liked the country. A series of suggestions made for the venue by each side were refused by the other before FIDE president Max Euwe stepped in and decreed that half the match would be played in Belgrade and half in Reykjavik, the first choices of each camp. This was incidentally something the President had no authority to do, but both sides agreed despite this.

The issue was further complicated by Fischer's on-again-off-again insistence that he should get 30% of the gate fees, de-

spite the prize money for the game already being extravagant when compared to past matches. The Yugoslavs agreed but asked for a \$35,000 bond to be refunded on

I haven't had any congratulations from Spassky yet. I think I'll send him a telegram. Congratulations on winning the right to meet me for the championship.

- Bobby Fischer, after defeating Petrosian in the '71 Candidates Final

Fischer's appearance, which he rejected. Eventually they got tired of the whole circus and withdrew as hosts and both sides agreed to play in Iceland—whereupon Fischer's camp again asked for more money. When it was refused, Fischer retaliated by failing to turn up for a gala opening dinner. In fact he hadn't even left the U.S., saying that he was ill and

promising a medical certificate (which didn't exist). Euwe postponed the match for four days (again exceeding his authority).

It still looked as though Bobby would not show until a British Financier, James Slater, doubled the prize money

for the event. Fischer was then on the next plane to Reykjavik (despite the fact he didn't have a reservation—Icelandic Air took another passenger off the flight just to make sure he didn't have another reason to change his mind).

Upon his arrival in Iceland the Russian camp demanded an apology from Fischer, which he delivered via his second, Lombardy. The Russians rejected it because it was not signed and was not delivered in person, whereupon Bobby hand wrote an apology and placed it beside the bed of a sleeping Boris Spassky at 4 a.m. in the morning. The game could begin.

The match was comprised of 24 games; 1 point for a win and ½ a point for a draw.

Game 1 - At the appointed time Spassky played 1.d4 but Fischer was not at the board. Seven minutes later he arrived, shook Spassky's hand and the match got underway in earnest. Spassky eventually won this game largely due to Fischer, in a drawn position, making an error and capturing a 'poison pawn' after 29 moves—however not before Fischer left the table for 30 minutes to protest the presence of TV cameras.

Game 2 - In the interim Fischer had sent a letter to the event organiser demanding that the cameras and the first few rows of spec-

The Russian camp demanded an apology from Fischer, which he delivered via his second, Lombardy. The Russians rejected it because it was not signed and was not delivered in person, whereupon Bobby hand wrote an apology and placed it beside the bed of a sleeping Boris Spassky at 4 a.m. in the morning.

tators be removed. The 'request' was refused since the TV cameras were needed to help finance the match. Fischer failed to show for the start of the game. Fox TV quickly withdrew the cameras but Fischer would only play if his clock was reset to zero. Officials refused and after an hour they defaulted him. This put Fischer in a difficult position, as it is much easier to maintain a lead in a match than to acquire it, since risks often need to be taken to win games whereas draws are easy to come by.

Game 3 - FIDE President

Euwe ratified Fischer's default in Game 2 and warned him that should he fail to turn up for Games 3 and 4 he would default the match. Fischer decided to play the third game after receiving a call from Henry Kissinger encouraging him to play on, though his decision reportedly was not influenced by the US department of state.

Fischer won the third game in 41 moves – the first time he had beaten Spassky. In their five games before this match, Spassky had won two and the other three had been drawn.

Game 4 - Still with no cameras present, Fischer's clock was started at the stipulated time, but with

neither player at the board. Four minutes later Spassky took his seat but it would be ten minutes in total before Fischer arrived, thus putting himself at a disadvantage.

Fischer started the game in his traditional way advancing his King's pawn two squares (an opening he had described as 'best by test' in his book 'My 60 Memorable Games' and which he used almost exclusively). Spassky developed a strong attack but Fischer defended well and the game ended in a draw.

Game 5 - Fischer arrived late for this game too, having complained about everything from the TV cameras, the size of the chess board, the pieces and the swimming pool in the hotel.

Spassky opened as he did in the first game and Fischer replied in kind employing the Nimzoindian defence. However, Spassky made an error on his 27th move and Fischer won the game. After 5 games the scores were even.

Game 6 - In game 6 Fischer played the Queen's Gambit for the first time in his life. The game continued in the Tartakover Variation, a line which Spassky had never lost. Fischer won the game in 41 moves after Spassky resigned. Spassky joined the audience in applauding his opponent; Fischer would later say of this, "Did you see that? That was class."

Game 7 - Fischer arrived late. Spassky played (what is for him) an unusual opening and the game finished in a draw.

Game 8 - Fischer agreed to allow the TV cameras on condition that they were at least

150 feet from the board, and that the Fox camera crew be replaced. Fox, not wanting to lose out on the investment, sold the TV rights to the American ABC for \$100,000. Fischer arrived late as usual. Spassky lost an exchange on the 15th move, and Fischer went on to win the game.

Game 9 - Spassky started to show signs of



Fischer agreed to allow the TV cameras on condition that they were at least 150 feet from the board, and that the Fox camera crew be replaced. Game 15 began the day after Fox filed a lawsuit against Fischer for \$1,750,000.

succumbing to Fischer's psychological tactics, leaving the board after every move. The game ended in a draw after only 29 moves.

The Russian authorities, realising that their star is being beaten, tried to recall him to Moscow but Spassky refused on sporting grounds.

Game 10 - The tenth game was a crushing win to Fischer after a line of play familiar to both players had

developed.

Game 11 - The tables were turned in the 11th game as Fischer failed to find a good reply to Spassky's innovation at the 14th move and was defeated.

Games 12 to 20 - Despite his win in game 11, Spassky was still two points behind, and this was made three with a win to Fischer in game 13. Fischer took advantage of his lead in the match as the competitors played out seven draws between games 12 and 20.

During this period there were other highlights off the board. Game 15 began the day after Fox filed a lawsuit against Fischer for \$1,750,000. Fischer's lawyers responded by saying that Fischer had signed no contractual agreement with Fox.

After the 16th game Fischer complained about the noise and the first three rows of spectators were cleared for the next game. At the end of the 17th game Spassky's second, Efim Geller, accused Fischer of using unethical means to disturb Spassky's concentration. This somehow lead to Icelandic police sweeping the hall the next night looking for listening bugs. They found only two dead flies in the lighting system.

Game 21 – With a win in this game Fischer would claim the title.

With the game in a level position Spassky made two errors handing the win to Fischer. The next day Spassky resigned by telephone. Fischer initially refused to accept this preferring the traditional method of signing the score sheet, but in the end he relented.

The match was over. Fischer was World Champion but the most bizarre turn of events was yet to come. Fischer didn't play a single game as World Champion, and forfeited the title three years later. He had demanded FIDE alter the rules of the World

Championship match to favour risk-taking and going for the win. In fact, Bobby Fischer disappeared completely from public life, not playing another official match until 1992. He moved from Budapest to Japan and all over the world in order to stay out of the spotlight. He returned to the US only once (in secrecy) to attend his sister's funeral, as he had been avoiding paying tax.



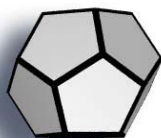
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Stories and rumours of Fischer playing Shuffle Board chess on the internet persist to this day, yet his only official game since was a World Championship rematch against Spassky in war-torn Yugoslavia in 1992. In typical Fischer style, he ignored a directive from the US state department not to play (because he would be violating sanctions against that country); boldly stating upon arrival that he was there to defend

his World Championship. Fischer won the match, only to disappear again.

Author's footnote: In writing this article I was often frustrated by having to leave out vast tomes of interesting things about Bobby Fischer (not least of which was his views on school and teachers) because there simply wasn't enough space. If you're interested go to the Geeks Bible (Google) and do a search – there's a wealth of information out there.

THE PLATONIC SOLIDS

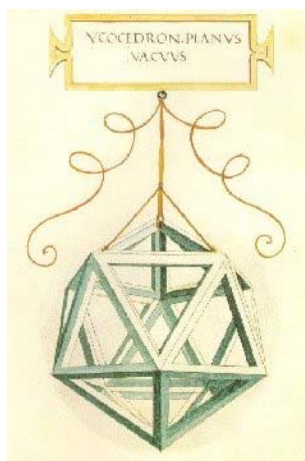


Here is the continuation of our regular series on the five Platonic Solids that began in Issue 5. Not only have these polyhedra inspired mathematicians and scientists with their symmetry, but artists throughout the ages have also been fascinated by them—not only as technical exercises in perspective drawing, but also as objects of beauty and ornament. Here we present an overview of how polyhedra, particularly the Platonic Solids, have featured in art over the last few hundred years.

CHAPTER 4: THE PLATONIC SOLIDS IN ART

The chief reason for studying regular polyhedra is still the same as in the time of the Pythagoreans, namely, that their symmetrical shapes appeal to one's artistic sense. — H.S.M. Coxeter

Polyhedra have been used in ornamentation since the beginnings of ornamentation itself. Rocks carved with polyhedral symmetry have been discovered in Scotland which are estimated to date back to several thousand years B.C., and ancient Viking belt buckles have been found which use cuboctahedral decorations.

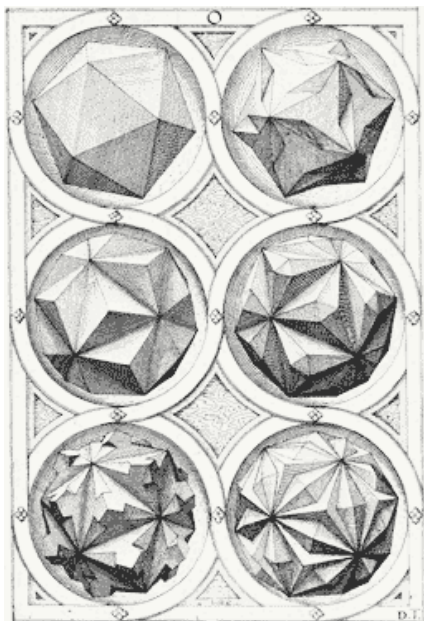


An icosahedron by
Leonardo Da Vinci

The use of polyhedra in art became popular when linear perspective was introduced by the Italians of the fifteenth century. The flat faces and hard edges of polyhedral forms made them very good exercises for those wanting to practice perspective constructions. Wentzel Jamnitzer was a master of these techniques and published in 1568 a famous work called *Perspectiva Corporum Regularium* including many etchings based on Platonic Solids. Leonardo da Vinci used polyhedral forms mainly as technical exercises, and some stunning marquetry panels exist which depict the Platonic Solids and other polyhedra in pictures constructed entirely from fine panels of different coloured wood (see opposite).



Marquetry panels by Fra Giovanni da Verona, constructed around 1520. These panels reside in the church of Santa Maria in Organo, Verona. Note that these are flat panels, and the perspective effect is due to the technical mastery of the artist.



← Variations on the Icosahedron,
by Wentzel Jamnitzer (1568)

Albrecht Dürer, the German renaissance printmaker (1471-1528), made an important contribution to the polyhedral literature in his 1525 book, *Underweysung der Messung*, known in English as *Painter's Manual*. It was one of the first books to teach the methods of perspective, and was highly regarded throughout the sixteenth century. One of his woodcuts, *Melancholia I*—incidentally most famous amongst mathematicians for its inclusion of a 'magic square' on the wall—also features a truncated cube.

Polyhedra also appear in 20th-century art. Salvador Dali used the Platonic Solids, as well as other mathematical constructions such as logarithmic spirals, in several of his works. Prints of Dali's pay homage to the work of Kepler by reproducing his sketches of the Platonic Solids as the underlying geometry of the solar system, and Dali has appeared in one of his own short films wearing a hat made from a dodecahedron. His painting *Sacrament of the Last Supper* contains a skeletal outline of part of a dodecahedron—the Platonic symbol of the universe. *Christus Hypercubus* takes geometry one step further by portraying Jesus Christ's crucifixion on an unravelled four-dimensional cube known as a hypercube.

Perhaps the most famous artist of recent times to depict polyhedra in his works is M. C. Escher. His print *Stars*, shown opposite, contains all of the Platonic Solids plus many other polyhedra. Polyhedra feature in many of his other works, including wood carvings based around Platonic symmetries.

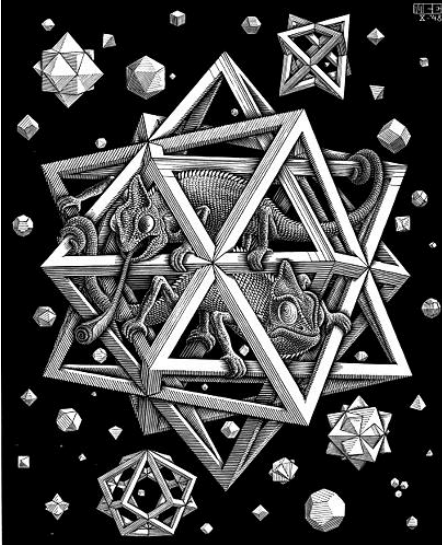
The technique of polyhedral sculpture continues to be carried out today by several artists, including mathematician George W.

Melancholia I by Albrecht Dürer →

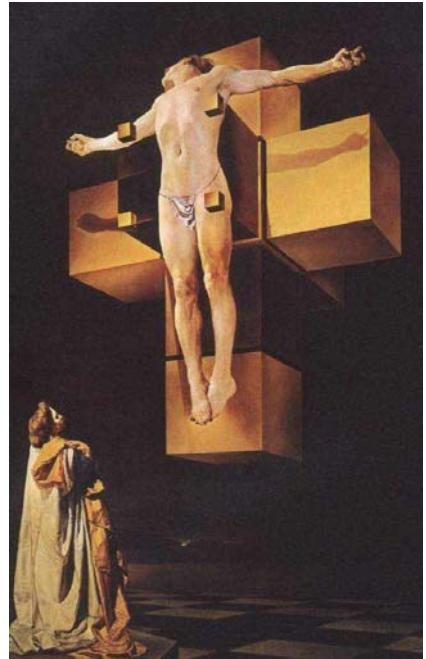


Hart. You can see his works at www.georgehart.com, which is also an excellent website for information about polyhedra.

Stars by M.C. Escher



Christus Hypercubus
by Salvador Dali



Sacrament of the Last Supper by Salvador Dali, featuring a dodecahedron.

Who Gets to Name Stars and Planets?

Earlier this year a great discovery was announced: astronomers had discovered a tenth planet in our solar system. Located three times further away than Pluto, the new satellite was named ‘Sedna’ by its discoverers, after the Inuit goddess of the ocean.



One of the most common reactions to the news was discussion of the new name. Love it or hate it, it certainly seems to be an improvement over its original designation of ‘2003 VB12’. However, in light of the International Astronomical Union’s statement that they may refuse the discoverers’ name for the planet in favour of one more consistent with the mythological names of the other planets, the question arises: who does, and should, be entitled to name astronomical objects?

The Scam Artists

One group of people you can be sure do *not* have the right to name stars and planets are private companies. At least half a dozen companies exist which offer to attach names to stars while making the designations seem official, providing a fancy certificate and directions for locating ‘your’ star. Their advertisements can be found in magazines and newspapers, and their promotional strategies range from harmlessly playful to bordering on fraudulent. The International Star Registry is one such company, which counts among its clients Nicole Kidman (a gift for Tom Cruise), Martin Short and Brooke Shields. Citizens of Daytona Beach named stars for each of the astronauts killed in the space shuttle Challenger explosion in 1986, the company says. At \$49.95 a pop, it’s a lucrative scam for the company owners.



The Name Police

Only the International Astronomical Union (IAU), which is viewed by astronomers as the official governing body, has the right to officially name celestial objects. It does so for scientific purposes only and does not recognize any commercial naming systems.

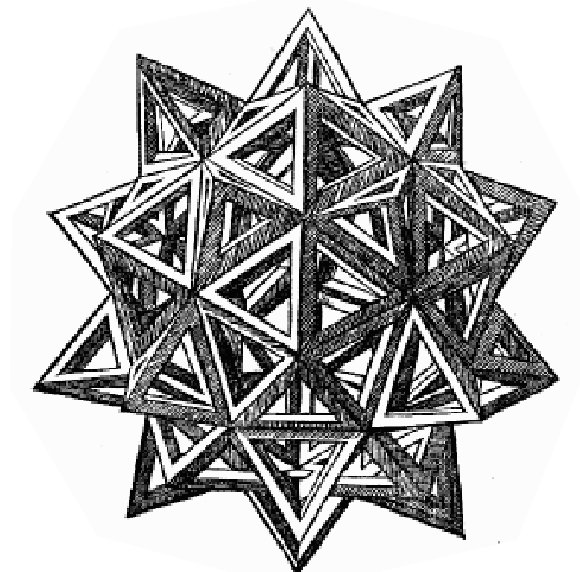
The IAU does recognize a handful of ancient star names, given to some of the brightest stars in our sky. But with millions and millions of stars out there, it wisely decided long ago that a numbering system is more useful for scientists.

Names are preferred over numbers, however, when it comes to naming the ‘minor planets’, or the larger bodies of the asteroid belt between Mars and Jupiter. The review process is “rigorous and noncommercial”—yet hardly results in the classical names seen in the planets. All four Beatles are up there, along with Duke Ellington, Zappa, Pushkin and the seven victims of the shuttle Columbia disaster earlier this year. Below are some of the more humorous, geeky or incomprehensible names listed for your amusement. (Designation numbers are in brackets.) As far as the naming of the heavens goes, it seems nerds are the ones to leave their mark.

(291) Alice	(2952) Lilliputia	(19019) Sunflower
(7470) Jabberwock	(4386) Lust	
(6984) Lewiscarroll		(10346) Triathlon
(6735) Madhatter	(4523) MIT	
(17612) Whiteknight	(18240) Mould	(9937) Triceratops
(17942) Whiterabbit		(9951) Tyrannosaurus
	(2309) Mr. Spock	(9860) Archaeopteryx
(5050) Doctorwatson	(12448) Mr. Tompkins	(9880) Stegosaurus
(5049) Sherlock		
	(12927) Pinocchio	(6000) United Nations
(29401) Asterix		(2842) Unsold
(29402) Obelix	(4345) Rachmaninoff	(634) Ute
	(11051) Racine	(1282) Utopia
(2684) Douglas	(12426) Racquetball	
(1996) Adams	(5945) Roachapproach	(24450) Victorchang
	(12820) Robinwilliams	(25399) Vonnegut
(9007) James Bond	(15907) Robot	
(13070) Seanconnery	(19383) Rolling Stones	(14917) Taco
(9618) Johncleese	(1773) Rumpelstilz	(10364) Tainai
		(3325) TARDIS
(9531) Jean-Luc	(2578) Saint-Exupery	
	(3534) Sax	(3834) Zappafrank
(5020) Asimov		



For more information see http://www.space.com/spacewatch/mystery_monday_030915.html and http://www.space.com/scienceastronomy/solarsystem/asteroid_name_991021.html.
For a full list of minor planet names see <http://cfa-www.harvard.edu/iau/lists/MPNames.html>.



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